

US EPA ARCHIVE DOCUMENT

*Blueprint LC 90*

TDMS0030

DATA EVALUATION RECORD

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CASE GS0030

METHOPRENE

PM

09/30/80

CHEM 105401

Methoprene (isopropyl (E,E)-11-methoxy

BRANCH EEB

DISC 35

TOPIC 05000043

FORMULATION 00 - ACTIVE INGREDIENT

FICHE/MASTER ID 00010388

CONTENT CAT 01

Sleight, B.H., III (1972) Research Report Submitted to Zoecon Corporation:  
Exposure of Fish to <sup>14</sup>C-labeled Altosid (TM): Accumulation,  
Distribution and Elimination of Residues. (Unpublished study received  
January 3, 1973 under 3G1343; prepared in cooperation with Bionomics,  
Inc., submitted by Zoecon Corp., Palo Alto, CA; 093592-BB)

SUBST. CLASS = S.

OTHER SUBJECT DESCRIPTORS

SEC: EEB -35-05050043

EEB -35-05100043

EEB -35-10200043

EEB -35-10990043

EEB -40-05103043

DIRECT RVW TIME = 3

(MH)

START DATE 9/14/81

END DATE 9/14/81

REVIEWED BY: Thomas B. Johnston  
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DATE: 12/2/81

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Fiche/Master ID: 00010388

Conclusions: This study is scientifically sound and fulfills the registration guideline requirement for an acute LC<sub>50</sub> on a warmwater fish. With a 96-hour LC<sub>50</sub> of 1.52 ppm, methoprene technical is moderately toxic to bluegill sunfish. Methoprene technical also shows considerable potential for temporary bioaccumulation, though the stored residues are quickly dissipated when the fish are removed from exposure.

Materials and Methods:

A. Test Type - 96-hr LC<sub>50</sub> and bioaccumulation

B. Test Species - Bluegill sunfish (Lepomis macrochirus)

C. Test Procedures - The assay was conducted in a continuous-flow proportional dilution apparatus. Thirty bluegills were used in each of eight concentrations, and the test was run at 18C. For the bioaccumulation test, 100 bluegills were exposed to 0.01 mg/l, and 100 more to 0.5 mg/l technical <sup>14</sup>C-labeled Altosid for 42 days. After day 35, 30-40 fish were transferred to clean water, and residue sampling continued for 28 days.

Statistical Analysis - Log/probit analyses were used to calculate LC<sub>50</sub>'s. The radiation count rate for a treated sample was considered significantly different from background if it exceeded the mean background level for untreated samples counted in the same set by more than twice the standard deviation of the control value.

Reported Results: The 96-hr. LC<sub>50</sub> for methoprene (Altosid) technical was 1.52 ppm. The 194-hr. LC<sub>50</sub> was 1.41 ppm. The 24-hr. LC<sub>50</sub> was >1.87 ppm. The mean nominal concentration of methoprene residues in the edible portions during days 7-42 of exposure was 550X and 950X the mean measured concentration of methoprene in the water for levels of 0.005 and 0.31 ppm, respectively. Less than 1% of the residue was adsorbed to the fishes' surfaces. Residues in non-edible portions exceeded residues in edible portions by 12X and 4X for low and high exposure animals, respectively. Upon transfer to uncontaminated water, fish exposed for 35 days to 0.005 and 0.31 ppm eliminated >75% and >95% of the residue, respectively, within 14 days.

Discussion:

A. Test Procedure - Bioassay was run at 18C, rather than the recommended 22C. Test was run under laboratory conditions. Tanks contained no organic material except the bluegills, and were not exposed to sunlight.

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- B. Statistical Analysis - Log/probit analyses appear accurate.
- C. Discussion/Results - Results and conclusions appear well supported by the data.
- D. Conclusion:
1. Category - Core
  2. Rationale - N/A
  3. Repairability - N/A

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